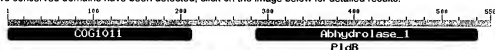


**BLAST Basic Local Alignment Search Tool**

Job Title: human soluble epoxide hydrolase BLAST

Show Conserved Domains

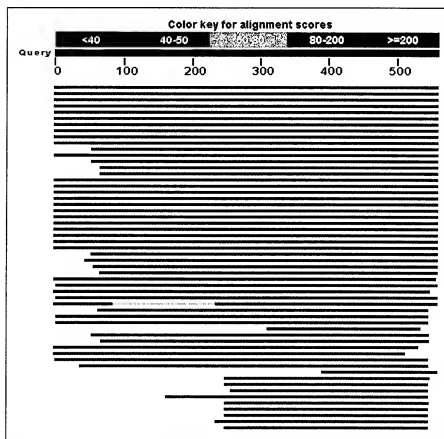
Putative conserved domains have been detected, click on the image below for detailed results.



BLASTP 2.2.18 (Mar-02-2008)

Reference: Altschul, Stephen F., Thomas L. Madden, Alejandro A. Schäffer, Jinghui Zhang, Zheng Zhang, Webb Miller, and David J. Lipman (1997), "Gapped BLAST and PSI-BLAST: a new generation of protein database search programs", *Nucleic Acids Res.* 25:3389-3402. Reference for compositional score matrix adjustment: Altschul, Stephen F., John C. Wootton, E. Michael Gertz, Richa Agarwala, Aleksandr Morgulis, Alejandro A. Schäffer, and Yi-Kuo Yu (2005) "Protein database searches using compositionally adjusted substitution matrices", *FEBS J.* 272:5101-5109. RID: 190BW5CM014 Database: All non-redundant GenBank CDS translations+PDB+SwissProt+PIR+PRF excluding environmental samples from WGS projects 6,470,629 sequences; 2,208,486,882 total letters

Query= Length=556

**Distribution of 101 Blast Hits on the Query Sequence**

Distance (tree) results <b>NEW</b>		Score	
Sequences producing significant alignments:		(Bits)	Value
gb AA011948.1 AK111948.1	soluble epoxide hydrolase [Homo sapiens]	1157	0.0
gb AA011948.1 AK111948.1	Homo sapiens epoxide hydrolase 2, cytoplasmic ...	1151	0.0
gb AA011948.1 AK111948.1	epoxide hydrolase 2, cytoplasmic [Homo sapiens]	1150	0.0
gb AA011948.1 AK111948.1	soluble epoxide hydrolase [Homo sapiens]	1149	0.0
ref XP_001163779.1	PREDICTED: epoxide hydrolase 2, cytoplasmic ...	1143	0.0
gb AA011948.1 AK111948.1	epoxide hydrolase 2, cytoplasmic, isoform CRA_...	1140	0.0
gb AA011948.1 AK111948.1	cytosolic epoxide hydrolase	1139	0.0
ref XP_001163779.1	PREDICTED: epoxide hydrolase 2, cytoplasmic ...	1136	0.0
ref XP_001163779.1	PREDICTED: similar to epoxide hydrolase 2, c...	1083	0.0
ref XP_001163779.1	PREDICTED: epoxide hydrolase 2, cytoplasmic ...	1076	0.0
gb AA011948.1 AK111948.1	epoxide hydrolase 2, cytoplasmic, isoform CRA_...	1065	0.0
ref XP_001163779.1	PREDICTED: epoxide hydrolase 2, cytoplasmic ...	1040	0.0
ref XP_001163779.1	PREDICTED: epoxide hydrolase 2, cytoplasmic ...	1036	0.0
gb AA011948.1 AK111948.1	epoxide hydrolase 2, cytoplasmic, isoform CRA_...	1010	0.0
ref XP_001163779.1	PREDICTED: epoxide hydrolase 2, cytoplasmic ...	1011	0.0
ref XP_001163779.1	PREDICTED: similar to epoxide hydrolase 2, c...	921	0.0
ref XP_001163779.1	PREDICTED: similar to epoxide hydrolase 2, c...	916	0.0
ref XP_001163779.1	PREDICTED: similar to soluble epoxide hydrol...	920	0.0
ref XP_001163779.1	soluble epoxide hydrolase [Sus scrofa] >...	924	0.0
ref XP_001163779.1	PREDICTED: similar to epoxide hydrolase 2, c...	918	0.0
ref XP_001163779.1	PREDICTED: similar to epoxide hydrolase 2, c...	912	0.0
ref XP_001163779.1	epoxide hydrolase 2, cytoplasmic [Bos tau...	902	0.0
emb CA065471.1	Epoxide Hydrolase [Mus musculus]	877	0.0
ref XP_001163779.1	epoxide hydrolase 2, cytoplasmic [Mus muscul...	875	0.0
gb AA011948.1 AK111948.1	unnamed protein product [Mus musculus]	874	0.0
ref XP_001163779.1	epoxide hydrolase 2, cytoplasmic [Rattus nor...	977	0.0
gb AA011948.1 AK111948.1	Epoxide hydrolase 2, cytoplasmic [Rattus norve...	85	0.0
gb AA011948.1 AK111948.1	epoxide hydrolase 2, cytoplasmic, isoform CRA_...	614	0.0
gb AA011948.1 AK111948.1	epoxide hydrolase 2, cytoplasmic, isoform CRA_...	811	0.0
gb AA011948.1 AK111948.1	ovary-selective epoxide hydrolase [Mus musculus]	803	0.0
gb AA011948.1 AK111948.1	epoxide hydrolase 2C [Mus musculus]	791	0.0
ref XP_001163779.1	PREDICTED: similar to soluble epoxide hydrol...	717	0.0
ref XP_001163779.1	epoxide hydrolase 2, cytoplasmic [Xenopus...	677	0.0
ref XP_001163779.1	epoxide hydrolase 2, cytoplasmic [Gallus ...	675	0.0
ref XP_001163779.1	epoxide hydrolase 2, cytoplasmic [Xenopus...	667	0.0
emb CA065471.1	hypothetical protein [Pongo pygmaeus]	644	0.0
ref XP_001163779.1	PREDICTED: similar to epoxide hydrolase 2...	612	3e-173
ref XP_001163779.1	epoxide hydrolase 2, cytoplasmic [Danio r...	572	2e-161
emb CA065471.1	unnamed protein product [Tetraodon nigroviridis]	478	4e-133
gb AA011948.1 AK111948.1	epoxide hydrolase 2, cytoplasmic, isoform CRA_...	463	1e-128
ref XP_001163779.1	PREDICTED: similar to Ephx2-prov protein [St...	454	8e-126
ref XP_001163779.1	PREDICTED: similar to Ephx2-prov protein ...	449	3e-124
ref XP_001163779.1	PREDICTED: similar to Ephx2-prov protein ...	420	1e-115
ref XP_001163779.1	PREDICTED: similar to Ephx2-prov protein, pa...	420	2e-115
ref XP_001163779.1	predicted protein [Nematostella vectensis...	464	1e-110
ref XP_001163779.1	PREDICTED: similar to soluble epoxide hydrol...	369	4e-82
ref XP_001163779.1	PREDICTED: hypothetical protein [Bos taurus]	284	1e-74
ref XP_001163779.1	epoxide hydrolase [Bradyrhizobium japonicum ...	236	4e-60
ref XP_001163779.1	Alpha/beta hydrolase [Rhodospseudomonas palu...	225	6e-60
ref XP_001163779.1	alpha/beta hydrolase fold [Parvivulum l...	234	1e-59
ref XP_001163779.1	PREDICTED: similar to soluble epoxide hydrol...	234	1e-59
ref XP_001163779.1	epoxide hydrolase [Caulobacter crescentus CB...	222	5e-59
ref XP_001163779.1	alpha/beta hydrolase fold [Caulobacter sp...	222	1e-58
ref XP_001163779.1	putative epoxide hydrolase [Hyphomonas neptu...	222	2e-57
ref XP_001163779.1	epoxide hydrolase [Streptomyces avermitilis ...	223	3e-56
ref XP_001163779.1	alpha/beta hydrolase fold [Rhodospseudomonas ...	222	4e-56

ref NP_050280.1	epoxide hydrolase 2, cytoplasmic, isoform CRA...	217	4e-56	G
ref NM_017875.1	PROBABLE EPOXIDE HYDROLASE EPHA (EPOXIDE HYD...	218	7e-56	G
ref AF040727.1	alpha/beta hydrolase fold [Clostridium be...	219	3e-55	G
ref ZP_001807.1	epoxide hydrolase Epha [Mycobacterium mar...	218	8e-55	G
ref ZP_001808.1	epoxide hydrolase Epha [Mycobacterium ulcera...	218	8e-55	G
ref J02741.1	epoxide hydrolase [Bradyrhizobium japonicum ...	218	1e-54	G
ref U01008.1	putative epoxide hydrolase [Mycococcus xanth...	217	2e-54	G
ref NP_050280.1	Epha [Mycobacterium avium subsp. paratubercu...	217	2e-54	G
ref AF_008774.1	COG0596: Predicted hydrolases or acyltrans...	216	3e-54	
ref AF_027094.1	alpha/beta hydrolase fold [Rhodopseudomonas...	216	4e-54	
ref NP_051790.1	epoxide hydrolase [Agrobacterium tumefaciens...	216	5e-54	G
ref YP_007619.1	hydrolase, alpha/beta fold family protein [M...	216	6e-54	G
ref NP_047711.1	epoxide hydrolase [Streptomyces coelicolor A...	215	9e-54	G
ref YP_007619.1	Probable epoxide hydrolase Epha [Mycobact...	214	1e-53	G
ref YP_001204.1	Putative epoxide hydrolase [Bradyrhizobiu...	214	1e-53	G
ref NP_048126.1	epoxide hydrolase [Rhodopseudomonas palustri...	214	2e-53	G
ref YP_001204.1	putative epoxide hydrolase [Bradyrhizobiu...	213	3e-53	G
ref NP_046551.1	epoxide hydrolase [Agrobacterium tumefaciens...	213	4e-53	G
ref AF_014604.1	putative epoxide hydrolase [Streptomyces rimo...	209	3e-52	
ref AF_014604.1	putative epoxide hydrolase [Erythrobacter ...	209	4e-52	
ref NP_001204.1	putative epoxide hydrolase [Bradyrhizobiu...	209	4e-52	G
ref AF_014604.1	probable epha protein-Mycobacterium tuberc...	209	6e-52	
ref ZP_006436.1	alpha/beta hydrolase fold [Rhodopseudomonas ...	204	2e-50	G
ref AF01215.1	unknown [Picea sitchensis]	202	3e-50	
ref NP_050521.1	epoxide hydrolase [Bradyrhizobium japonicum ...	202	6e-50	G
emb CA043434.1	unnamed protein product [Vitis vinifera]	201	9e-50	
ref XP_010578.1	alpha/beta hydrolase fold [Birchodleria ph...	200	2e-49	
ref ZP_010404.1	epoxide hydrolase [marine gamma proteobact...	200	2e-49	
ref YP_042156.1	hydrolase, alpha/beta fold family [Alcanivor...	199	4e-49	G
ref YP_041780.1	alpha/beta hydrolase fold [Rhodopseudomonas ...	199	4e-49	G
ref YP_026055.1	epoxide hydrolase [Pseudomonas fluorescens Pf-5]	194	5e-49	G
ref YP_001004.1	epoxide hydrolase [Bradyrhizobium sp. ORS...	199	6e-49	G
ref AF014604.1	putative epoxide hydrolase [uncultured marine ...	199	7e-49	
ref NP_024937.1	epoxide hydrolase [Streptomyces avermitilis ...	199	7e-49	G
ref NP_024937.1	probable epoxide hydrolase [Rhodococcus sp. ...	199	9e-49	G
ref NP_024937.1	epoxide hydrolase [Mycobacterium smegmatis s...	198	1e-48	G
ref BAD13546.1	soluble epoxide hydrolase [Citrus jambhiri]	198	1e-48	
ref NP_024937.1	epoxide hydrolase [Streptomyces avermitilis ...	197	1e-48	G
ref ZP_010404.1	alpha/beta hydrolase fold [Mycobacterium ...	197	2e-48	G
ref ZP_010404.1	alpha/beta hydrolase fold [Caulobacter sp...	196	3e-48	G
ref ZP_010404.1	alpha/beta hydrolase fold [Mycobacterium sp...	196	4e-48	G
ref AF014604.1	epoxide hydrolase	195	8e-48	
gb AB080201.1	Epoxide hydrolase [Medicago truncatula]	194	2e-47	
gb AB080201.1	epoxide hydrolase [uncultured marine bacterium...	194	2e-47	

## Alignments

```

>gb|AA014968.1|AF233336_1 G soluble epoxide hydrolase [Homo sapiens]
length=556

GENE ID: 2053 EPHX2 | epoxide hydrolase 2, cytoplasmic [Homo sapiens]
(Over 10 PubMed links)

Score = 1157 bits (2994), Expect = 0.0, Method: Compositional matrix adjust.
Identities = 556/556 (100%), Positives = 556/556 (100%), Gaps = 0/556 (0%)

Query 1  MTLRAAVFDLDGVLALPAVFGVLGRTEALALPGLINDAFQKGQEGGATTRLMKGFTTL 60
Sbjct 1  MTLRAAVFDLDGVLALPAVFGVLGRTEALALPGLINDAFQKGQEGGATTRLMKGFTTL 60

Query 61  SQWIPMEENCRCCKSETAKVCLPKNFSEIKFIPKAI SARKINRPMLOQAALMLRKGFTTTA 120
Sbjct 61  SQWIPMEENCRCCKSETAKVCLPKNFSEIKFIPKAI SARKINRPMLOQAALMLRKGFTTTA 120

Query 121  ILTNTWLDDRAERDGLAQLMCELKMHFDPLIESCQVGMVKPEFQIYKFLDITLKASPSV 180
Sbjct 121  ILTNTWLDDRAERDGLAQLMCELKMHFDPLIESCQVGMVKPEFQIYKFLDITLKASPSV 180

Query 181  VFLLDIDGANKLPARDIGMVITLVQDPTDLKELKVTGQLLNTPAFLITSCNPSDMSHG 240
Sbjct 181  VFLLDIDGANKLPARDIGMVITLVQDPTDLKELKVTGQLLNTPAFLITSCNPSDMSHG 240

```



## Conserved Domains



NewSearch

PubMed

**Nucleotide**

## Protein

## Structure

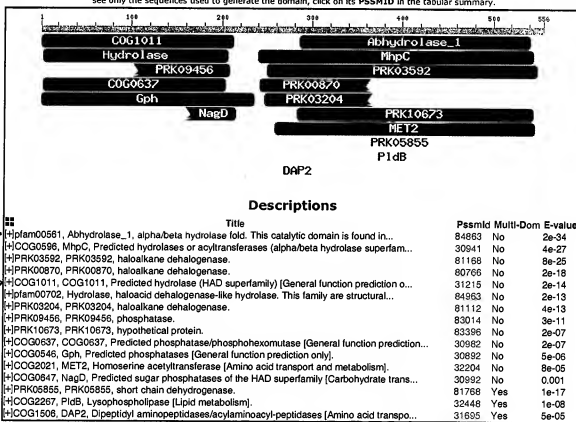
Taxono

Help

**Query sequence:** [(local sequence)|cl|18838]

☐ Concise Result ☒ Full Result ☐ Show Search Information 

Click on the **colored bar** for a conserved domain to **view your query sequence** within the multiple sequence alignment for that domain. To see only the sequences used to generate the domain, click on its **PSSMID** in the tabular summary.



Search for similar domain architectures

CD Search Reference:

- <sup>†</sup> Marchler-Bauer A, Bryant SH (2004), "CD-Search: protein domain annotations on the fly.", *Nucleic Acids Res.*32(W)327-331.

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